

ABSTRACT

An improved line driver and method for increasing the available signal transmit power on a transmission line are disclosed. The improved line driver achieves an available transmit power increase without increasing the maximum current in the line driver output stage. The output stage of the line driver may comprise a first amplifier, a second amplifier, and an integrated back-matching resistor network. In order to further increase the available transmit power; a protective semiconductor device may be added to a line driver output stage for each semiconductor device in the first and second amplifiers. A third embodiment of a line driver output stage in accordance with the present invention may comprise a combination of the integrated back-matching resistor network along with the protective semiconductor devices. In its broadest terms, the method for increasing the available signal transmit power on a transmission line of the present invention can be described as: applying a transmit signal to an input stage of an integrated line driver; amplifying the transmit signal such that the output signal swing exceeds the maximum drain-source voltage of the integrated circuit technology used to implement the line driver amplifier(s); and applying the amplified transmit signal via an integrated back-matching resistor network to the transmission line.